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PATENT

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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In re application of: Field et al.

Attorney Docket No.: SUN1P252/P4198

Application No.: 09/540,576

Examiner: Kiss, Eric B.

Filed: February 24, 2000

Group: 2122

Title: DEBUGGER PROTOCOL GENERATOR

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**DECLARATION UNDER 37 CFR § 1.132**

Commissioner for Patents  
Washington, D.C. 20231

Sir:

I, Robert Field, declare the following:

1. I am one of the inventors of the invention set forth in the above referenced application.
2. I gave a presentation entitled "The New Java™ Platform Debugger Architecture," on March 26, 1998, at the Moscone Convention Center in San Francisco.
3. I understand that the Gordon Hirsch, the other inventor of the invention set forth in the above referenced application, also participated in the presentation entitled "The New Java™ Platform Debugger Architecture," on March 26, 1998, at the Moscone Convention Center in San Francisco.
4. I was present during the entire presentation entitled "The New Java™ Platform Architecture," on March 26, 1998, at the Moscone Convention Center in San Francisco, on March 26, 1998.

5. I have reviewed the claimed invention of the above-identified application (claims 20 and 24-32).

6. I earnestly believe that, among other things, the claimed features relating to "automatically generating the front and back-end of the debugger program portions based on the parsing of a formal specification" (see, for example claim 20) were NOT publicly disclosed or otherwise made available to the public during the presentation entitled "The New Java™ Platform Architecture," on March 26, 1998, at the Moscone Convention Center in San Francisco.

7. I have reviewed the engineering documents relating to the May 1998 "Early access" of the Java Platform Debugger Architecture (Jbug).

8. Based on my review of the engineering documents relating to the May 1998 "Early access" of the Java Platform Debugger Architecture (Jbug), I earnestly believe that the May 1998 "Early access" of the Java Platform Debugger Architecture (Jbug), among other things, did NOT include the claimed features of automatically generating the front and back-end of the debugger program portions based on the parsing of a formal specification.

9. I have reviewed the provisional application 60/145, 136, filed July 21, 1999.

10. I understand that the provisional application 60/145, 136, filed July 21, 1999 includes a section entitled the "changes since early access" (a copy of which is attached herein).

11. Based on my review of the provisional application 60/145, 136, filed July 21, 1999, I am further convinced that the May 1998 "Early access" of the Java Platform Debugger Architecture (Jbug), among other things, did NOT include the claimed features relating to "automatically generating the front and back-end of the debugger program portions based on the parsing of a formal specification."

12. I have reviewed the engineering documents relating to the Beta 1 testing (December 1998) and Beta 2 testing (March 20, 1999) development period of the Java Debugger Architecture (Jbug).

13. I earnestly believe that both the Beta 1 (December 1998) and Beta 2 (March 20, 1999) testing of the Java Platform Debugger Architecture (Jbug) were experimental test releases to solicit input from the testers.

14. I earnestly believe that input was solicited from the testers during the Beta 1 and Beta 2 test periods and modifications were continued to be made to the Java Platform Debugger Architecture (Jbug) software based on the input received during the Beta testing periods.

15. I have reviewed the Jbug Beta Software License (a copy of which of is attached herein).

16. I earnestly believe that both Beta 1 and Beta 2 test releases of the Jbug test software were performed under the Jbug Beta Software License for a sixty (60) day period (please see, Jbug-beta Software License, section 1, BETA TESTING PERIOD) in order to fix any defects or deficiencies that were present in the experimental version of the Java Platform Debugger Architecture (Jbug).

17. I understand that Jbug Beta Software License includes a non-disclosure agreement that strictly forbids disclosure of confidential information by the testers to any third party (Jbug-beta Software License, section 3).

18. I have no reason to believe that the non-disclosure agreement of the Jbug Beta Software License was violated by any of the testers during the Beta 1 or Beta 2 testing.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true. I further declare that these statements are made with the knowledge that willful false statements and the like so made are

punishable by fine or imprisonment, or both (under Section 1001 of Title 18 of the United States Code), and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date

Oct 14, 2004

Robert Field:

Robert J. Field

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- Fixed bug in counted events and added checks for illegal count values.
- Fixed target VM crash after debugger attach fails.
- Worked around questionable line number info generated by javac.
- Fixed concurrency bugs in `ObjectReference.enableCollection` and `disableCollection`.
- Fixed hang in target VM when started with `suspend=n`
- Fixed bugs in several operations when attempted with subclasses `ObjectReference`.
- Fixed serious synchronization bug in the socket transport which could result in corrupted packets.
- Fixed missing exception for invalid threads in `ObjectReference.invokeMethod`.
- Added missing constructor to `VMDisconnectedException`
- Fixed rare crash when cancelling certain step event requests.
- Fixed target VM crash when attempting a thread operation on a zombie thread.
- Fixed incorrect behavior in the timed version of `EventQueue.waitForEvent`
- Fixed `NullPointerException` in setting local variables to null and an internal error when setting locals to objects of certain common types.
- Fixed incorrectly reported step depth and size for step event requests
- Fixed hang if a JDI method is called as the target VM is exiting.
- Fixed missing exception on certain out-of-bounds conditions on array element gets and sets.
- Fixed target VM crash sometime after a `ReferenceType.classObject` call.
- Underlying event handling infrastructure of example GUI debugger overhauled: Uses `EventSets`, handles Watchpoints, etc.

## Changes since Early Access

Some of the changes since Early Access (in no particular order):

- Method invocation and instance creation.
- Revamp of reference management.
- All JDI methods now implemented.
- Add type checking on Object values.
- Much error handling clean-up.
- Added example GUI debugger.
- JDWP now formally specified and mechanically generated.
- Add `EventRequests`, which control event propagation.
- Move stepping to `EventRequest` model.
- Divide JDI into five packages.
- Add pluggable Transports and Connects.
- Added `VirtualMachineManager` to JDI to manage connections to multiple target VMs
- Add attaching and Just-In-Time connections.
- Remove VM interrupted model, replace with suspend/resume model.
- Add VM disconnected event and exception.
- Remove all dependencies on Sun VM interface.
- Add `VoidValue` and `VoidType` to JDI.
- Add `VirtualMachine.classpath()` and `bootclasspath()` to JDI.
- Add `VirtualMachine.exit()` to JDI.
- Add `VMStartEvent` to the JDI.
- Renamed `ThreadEndEvent` to `ThreadDeathEvent` for consistency.
- JDI exceptions overhaul
- JDI Location now consistently only in executable code.
- Changed back end library name from `jdi` to `jdwp`. Now `-runjdwp`: ...
- Removed `run` command from `jdb`. Auto started. Use "cont".